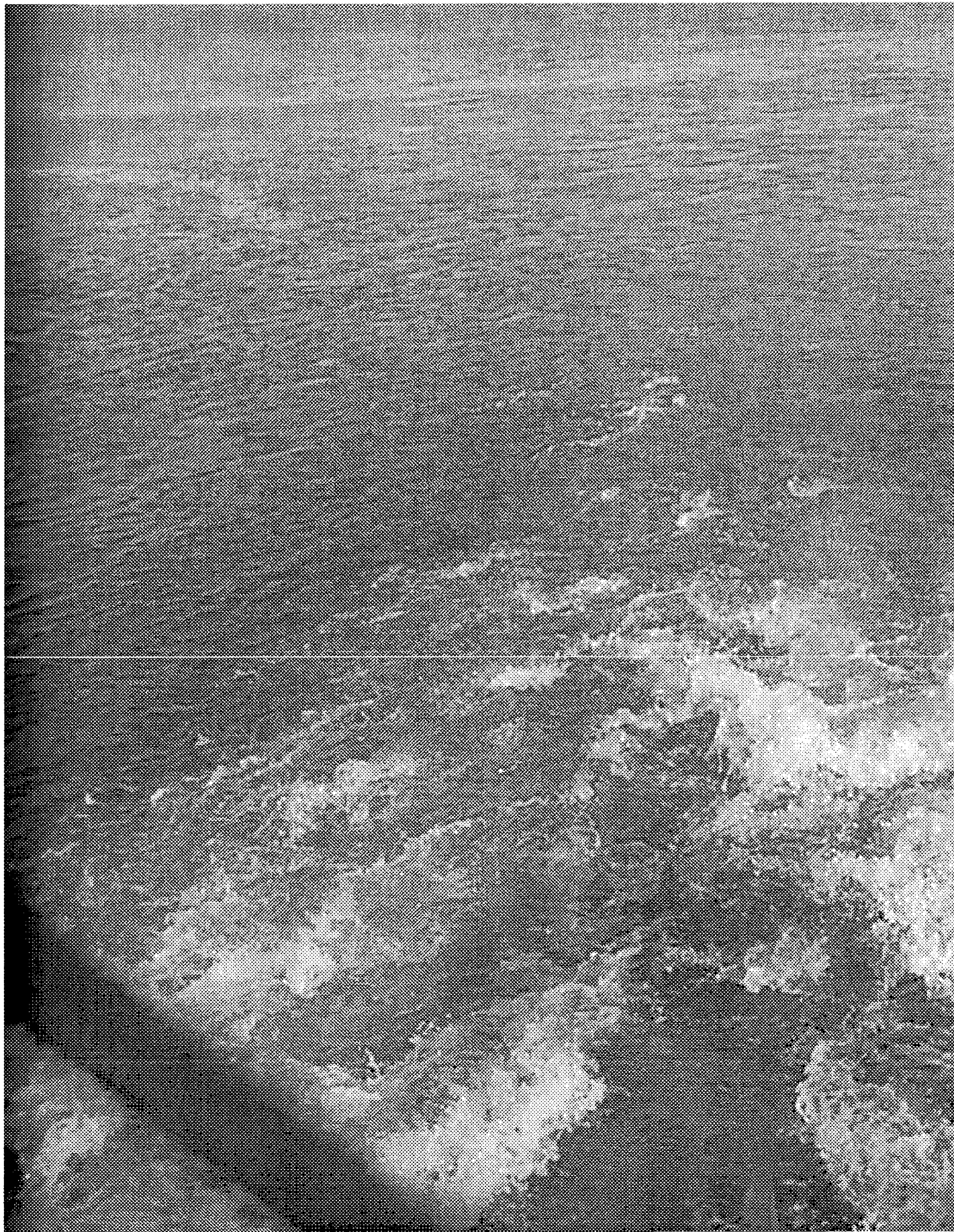
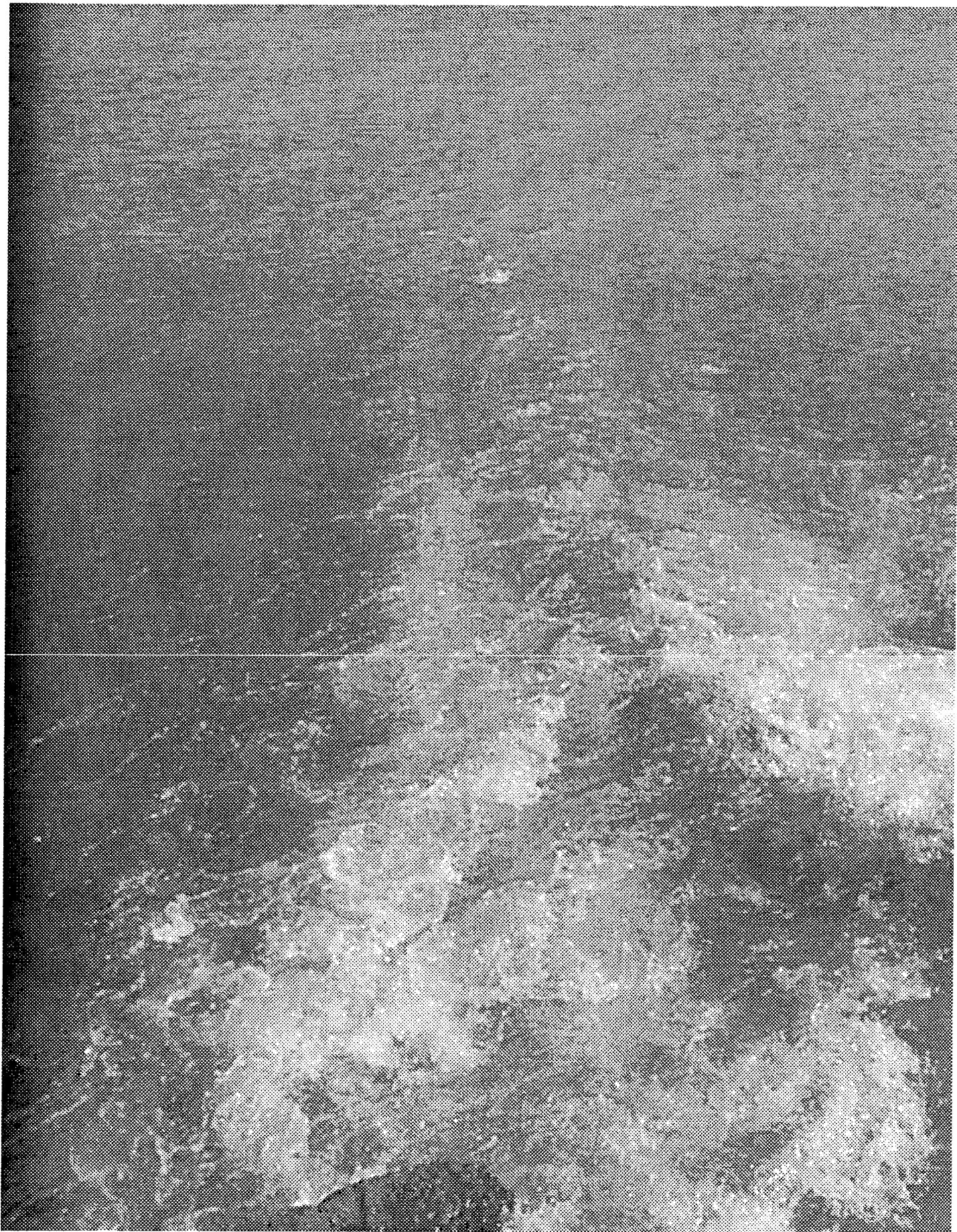


Figure 8



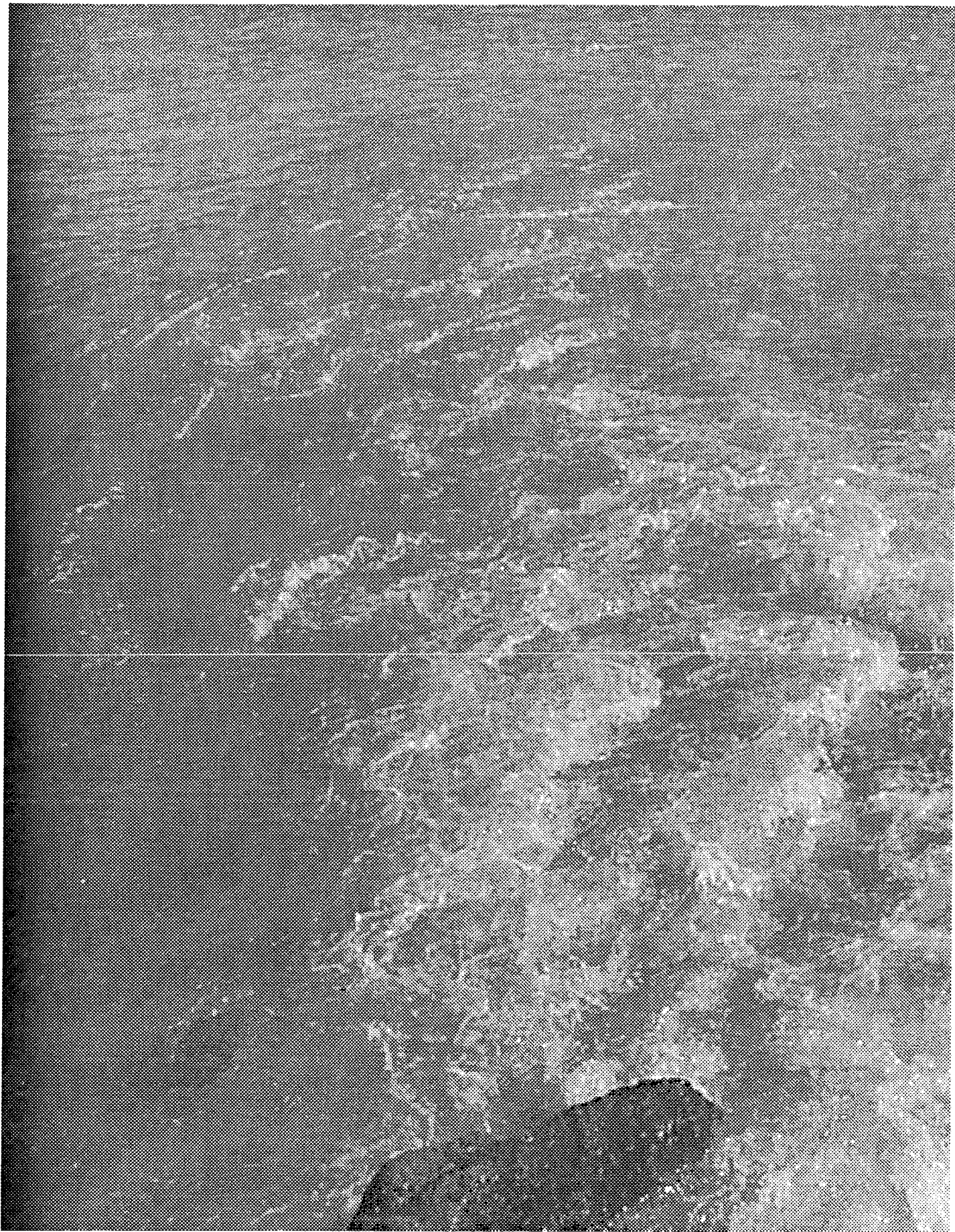
Outfall 002 - September 19, 2000

Figure 9



Outfall 002 - September 29, 2000

Figure 10



Outfall 002 - October 6, 2000

Table 1

BP Amoco Whiting Refinery Outfall 001

September 2000

	TSS mg/l	TSS LB/D	O&G mg/l	O&G LB/D
1	-----	-----	2.6	421
2	-----	-----	-----	-----
3	17.2	2553	-----	-----
4	11.4	1787	2.1	329
5	11.4	1797	2.0	315
6	10.8	1648	2.8	427
7	13.2	1761	3.0	400
8	-----	-----	2.5	402
9	-----	-----	-----	-----
10	12.2	1760	-----	-----
11	14.8	2382	3.8	612
12	26.5	4420	4.8	801
13	14.7	2023	2.5	344
14	16.5	1748	2.7	286
15	-----	-----	2.4	352
16	-----	-----	-----	-----
17	10.0	1384	-----	-----
18	7.6	1071	1.1	155
19	6.0	966	0.8	129
20	7.6	1261	1.3	216
21	8.0	1274	1.4	223
22	-----	-----	1.3	236
23	-----	-----	-----	-----
24	13.6	2257	-----	-----
25	9.2	1389	1.2	181
26	10.8	1846	1.3	222
27	12.4	2037	1.4	230
28	11.6	1945	1.4	235
29	-----	-----	0.8	116
30	-----	-----	-----	-----
avg		1865		316
Limit	Monthly Avg Daily Max	3646 5694	Monthly Avg Daily Max	1368 2600

Table 2

BP Amoco Whiting Refinery Outfall 001

April 1994

	TSS mg/l	TSS LB/D	O&G mg/l	O&G LB/D
18	7	915	0.5	65
19	7	251	0.7	25
20	7	1411	0.7	141
21	6	830	0.4	55
avg				
Limit	Monthly Avg Daily Max	3646 5694	Monthly Avg Daily Max	1368 2600

BP Amoco



CERTIFIED MAIL
RETURN RECEIPT REQUESTED

April 25, 2000

Mr. Greg Glover
Indiana Department of Environmental Management
Office of Water Management
100 North Senate
Indianapolis, IN 46206-6015

Dear Mr. Glover:

NPDES Permit No. IN-0000108
Exceedance of Daily Maximum Limit for Total Suspended Solids at Outfall 001

This letter serves as a follow-up to our initial notification on April 19, 2000, concerning the exceedance of the daily maximum limit for total suspended solids (TSS) at Outfall 001 on April 17, 2000. We became aware of the noncompliance at 2 PM (CST) on April 18, 2000, when we received the analytical result for this parameter. In accordance with our permit, we notified your office at 12:25 PM (CST) on April 19, 2000. The discharge loading from Outfall 001 on April 17, 2000 was 6,741 pounds of TSS. Our daily maximum allowable TSS loading is 5,694 pounds. The exceedance for this parameter was limited to one day, April 17, 2000. The Outfall 001 discharge met all permit limits starting April 18, 2000, as documented by subsequent analytical testing. The TSS on April 18, 2000 was 3,514 pounds, which is 2,180 pounds below our permitted limit.

The one day permit exceedance for TSS is believed to be caused by a combination of events, which had an accumulative impact on the refinery's wastewater treatment plant. First, we had experienced above normal oil and solids loadings into our pre-treatment system over the last two months, due to scheduled shutdowns and start-ups of process units in the refinery for equipment maintenance and repair. Second, as a result of an unexpected process upset, we had an increased level of nitrogen enter the process sewer. We took precautionary measures and stored this wastewater and then slowly processed it through the wastewater treatment plant. Lastly, we encountered an unexpected very heavy rainfall from late April 16 through April 17, 2000. This increased hydraulic loading in combination with the increased contaminant loadings put an unexpected stress on the plant, which potentially led to the reported TSS exceedance.

OFFICE
OF
WATER MANAGEMENT
IDEM
May 3 4 49 PM '00

BP Amoco Oil

Whiting Refinery
2815 Indianapolis Boulevard
Post Office Box 710
Whiting Indiana 46394-0710
219-473-7700

WATER OFFICE
Compliance/Lake

Report Date: 4/19/00

Indiana Department of Environmental Management
Office of Water Management, Noncompliance Notification Report

Noncompliance resulting in a fish kill or other severe environmental damage must be reported to the Office of Emergency Response at: Within Indiana (888) 233-7745, or (317) 233-7745 Out-of State.

Facility Name:

County:

Permit Number:

BP/Amoco

Lake

IN0000108

Individual Making Report:

Phone Number:

Noncompliance Date:

Natalie Grimmer

(219) 473-5417

4/17/00

Parameter / Outfall

Q Ave

Q Max

C Min

C Ave

C Max

Units

Reported TSS

6741

Limit

5694

lbs/day

lbs/day

Reported

Limit

Reason for Noncompliance:

A rapid 8" rainfall which washed sediment to the storm drains while at the same time several "units"

had been taken off line for maintenance & then restarted. Restarts
 tend to cause heavy oil loadings.

Actions Taken To Prevent, Minimize or Mitigate Damage:

Actions Taken To Prevent Reoccurrence:

Signature: GTG

Compliance/Lake

OFFICE OF
WATER MANAGEMENT
IDEM
May 3 4 49 PM '00

BP Amoco



CERTIFIED MAIL
RETURN RECEIPT REQUESTED

BP Amoco Oil

Whiting Refinery
2815 Indianapolis Boulevard
Post Office Box 710
Whiting Indiana 46394-0710
219-473-7700

April 25, 2000

Mr. Greg Glover
Indiana Department of Environmental Management
Office of Water Management
100 North Senate
Indianapolis, IN 46206-6015

Dear Mr. Glover:

NPDES Permit No. IN 00000108

Exceedance of Daily Maximum Limit for Total Suspended Solids at Outfall 001

This letter serves as a follow-up to our initial notification on April 19, 2000, concerning the exceedance of the daily maximum limit for total suspended solids (TSS) at Outfall 001 on April 17, 2000. We became aware of the noncompliance at 2 PM (CST) on April 18, 2000, when we received the analytical result for this parameter. In accordance with our permit, we notified your office at 12:25 PM (CST) on April 19, 2000. The discharge loading from Outfall 001 on April 17, 2000 was 6,741 pounds of TSS. Our daily maximum allowable TSS loading is 5,694 pounds. The exceedance for this parameter was limited to one day, April 17, 2000. The Outfall 001 discharge met all permit limits starting April 18, 2000, as documented by subsequent analytical testing. The TSS on April 18, 2000 was 3,514 pounds, which is 2,180 pounds below our permitted limit.

The one day permit exceedance for TSS is believed to be caused by a combination of events, which had an accumulative impact on the refinery's wastewater treatment plant. First, we had experienced above normal oil and solids loadings into our pre-treatment system over the last two months, due to scheduled shutdowns and start-ups of process units in the refinery for equipment maintenance and repair. Second, as a result of an unexpected process upset, we had an increased level of nitrogen enter the process sewer. We took precautionary measures and stored this wastewater and then slowly processed it through the wastewater treatment plant. Lastly, we encountered an unexpected very heavy rainfall from late April 16 through April 17, 2000. This increased hydraulic loading in combination with the increased contaminant loadings put an unexpected stress on the plant, which potentially led to the reported TSS exceedance.

OFFICE
OF
WATER MANAGEMENT
IDEM
May 3 4 49 PM '00

Mr. Greg Glover
April 25, 2000
Page 2

Every possible effort was made to meet the permit limits for April 17, 2000. The refinery implemented its water shedding plan beginning at around 10 AM (CST) on that day to reduce the water flow to the wastewater treatment plant and we implemented a refinery wide directive to minimize any drainings to the process sewer. Additionally, we optimized our wastewater treatment operations to minimize the impact on TSS loadings.

An investigation team has been formulated to review the causes of the exceedance and to develop proposals to prevent a recurrence. Should you have any questions or require additional information, please call Natalie Grimmer of my staff at (219) 473-5417.

Sincerely,



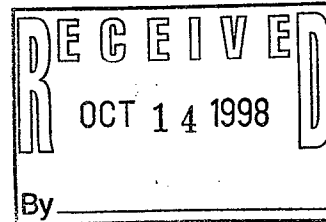
Stephen D. Simko
Environmental Superintendent, HSE

Woodward-Clyde Consultants

Engineering & sciences applied to the earth & its environment.

October 9, 1998

CERTIFIED MAIL-
RETURN RECEIPT REQUESTED



Mr. Steven Judeth
Office of Enforcement
Indiana Department of Environmental Management
100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015

Subject: Amoco Oil Company and Amoco Pipeline Company, Cause No. B-1545,
Free Phase Xylene Recovery - 3rd Quarter 1998 Report

Dear Mr. Judeth:

Woodward-Clyde International-Americas (WCIA), on behalf of Amoco Pipeline Company, submits this free phase xylene (FPX) quarterly report for the Amoco Pipeline Xylene Site located at 129th Street and Calumet Avenue in Hammond Indiana. This quarterly report is for the period from July 1, 1998 through September 21, 1998. This report also presents the analytical results for the annual groundwater sampling event.

Groundwater Elevations

WCIA performed fluid level measurements on August 19, 1998 in site monitoring wells and selected well points. The depth to product and depth to groundwater were measured at each location. The field measurements and corrected groundwater elevations are presented in Table 1. The groundwater elevations are depressed between the well point system and the xylene pumphouse due to pumping of groundwater by the well point system.

FPX Thickness

Table 1 also presents the corrected FPX thickness for the wells and well points for August 19, 1998. The FPX thickness has been corrected based on the specific gravity value of xylene (0.86).

The formula used to correct the FPX thickness is presented below:

$$FPX_c = FPX_m * ((1-SG) / SG) \text{ where:}$$

FPX_c = corrected FPX thickness; FPX_m = measured FPX thickness; and SG = specific gravity of FPX



FIGURE 3
TOTAL FLUID RECOVERY VOLUME
AMOCO XYLENES AREA
HAMMOND, INDIANA

Well Point System

J-162

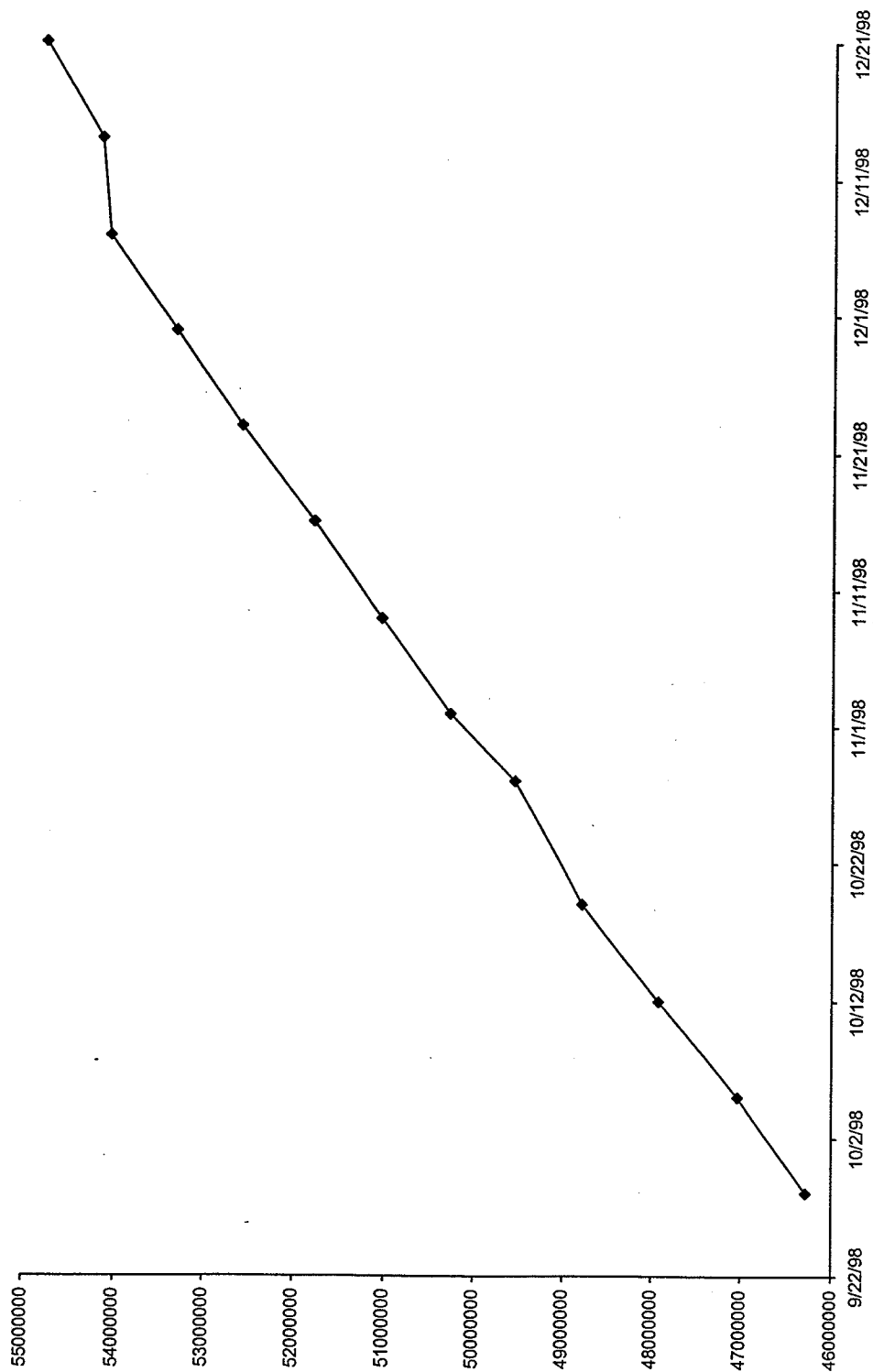


FIGURE 4
AVERAGE FLUID RECOVERY RATE
AMOCO XYLENES AREA
HAMMOND, INDIANA

Well Point System

J-162

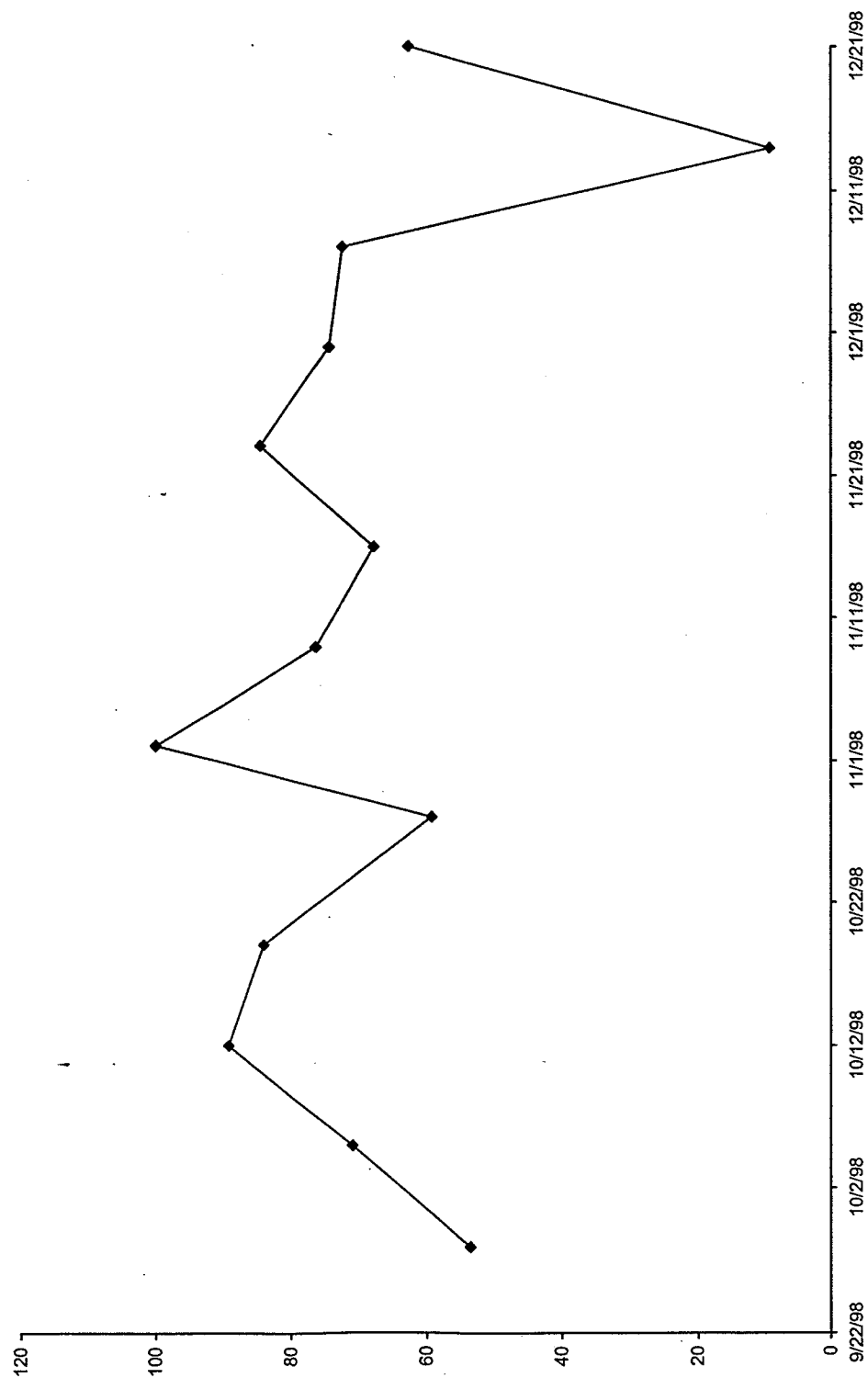


FIGURE 5
PERCENT HYDROCARBON EMULSION
AMOCO XYLENES AREA
HAMMOND, INDIANA

Well Point System

J-162

